Space Weather Forecast

Issued on Thursday, 17 February 2022 at 12:31 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over the past 24 hours with a couple of common class flares observed. There are seven sunspot regions on the visible disc. Most of these are small and relatively simple. No Earth-directed Coronal Mass Ejections (CMEs) were in evidence in available coronagraph imagery in the past 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind speed has been Slow. The total magnetic field has been weak throughout, as has the important north-south component. Geomagnetic activity was Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The high energy proton flux was at background levels, but increased slightly. This was probably due to the large CME which occurred on the far side late on the 15th.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain Very Low or Low through the forecast period, with a slight chance of isolated moderate-class flares. Most likely on day 1 whilst a significant sunspot region remains near the west limb on the far side.

Solar Wind / Geomagnetic Activity: No CMEs feature in this forecast period. Solar winds are likely to remain slow through the forecast period, leading to predominantly Quiet geomagnetic activity. However, there is a chance of solar winds becoming elevated later on day 3 (19th) into day 4 (20th) due to the fast wind from the coronal hole extending from the southern crown. If this was to happen geomagnetic activity would likely become Unsettled to Active, and there would be a chance of a minor geomagnetic storm interval.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	10	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	5	5	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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